

### REMARKS

Claims 1, 8, and 17 have been amended. Claims 1-20 are pending in the case. Further examination and reconsideration of pending claims 1-20 are respectfully requested.

### Section 102 Rejections

Claims 1-8, 11, and 13-15 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,208,648 to Batchelder et al. (hereinafter "Batchelder"). As will be set forth in more detail below, the § 102 rejections of claims 1-8, 11, and 13-15 are respectfully traversed.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), MPEP § 2131. The cited art does not disclose all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

**The cited art does not teach an optical component configured to project ultraviolet light onto a specimen during inspection or review of the specimen.** Amended independent claim 1 recites in part: "an optical component configured to project ultraviolet light onto a specimen during inspection or review of the specimen." Support for the amendments to claim 1 can be found in the Specification, for example, on page 3, lines 11-24, page 7, lines 7-9, and page 12, lines 7-15 and 27-29.

Batchelder discloses an apparatus for high numerical aperture microscopic examination of materials. Batchelder, however, does not disclose an optical component configured to project ultraviolet light onto a specimen during inspection or review of the specimen. For example, Batchelder states that the prior art invention relates to an "Apparatus and a method for performing high resolution optical imaging in the near infrared of internal features of semiconductor wafers." (Batchelder – abstract). Batchelder also states that "In visible light microscopes, immersion lenses are sometimes used to achieve numerical apertures greater than unity." (Batchelder – col. 5, lines 37-39). Therefore, Batchelder teaches an infrared imaging apparatus and a visible light microscope. However, Batchelder does not teach that the apparatus or the microscope can perform inspection or review of a specimen using ultraviolet light. As such, Batchelder does not teach an optical component configured to project ultraviolet

light onto a specimen during inspection or review of the specimen, as recited in claim 1. Consequently, Batchelder does not teach all limitations of claim 1.

For at least the reasons set forth above, independent claim 1, as well as claims dependent therefrom, are not anticipated by the cited art. Accordingly, removal of the § 102 rejections of claims 1-8, 11, and 13-15 is respectfully requested.

#### **Section 103(a) Rejections**

Claims 10-12 and 17-20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Batchelder. As will be set forth in more detail below, the § 103 rejections of claims 10-12 and 17-20 are respectfully traversed.

To establish *prima facie* obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP 2143.03. Obviousness cannot be established by combining or modifying the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion or incentive to do so. *In re Bond*, 910 F.2d 81, 834, 15 USPQ2d 1566, 1568 (Fed. Cir. 1990). The cited art does not teach or suggest all limitations of the currently pending claims, some distinctive limitations of which are set forth in more detail below.

**The cited art does not teach, suggest, or provide motivation for an optical component configured to project ultraviolet light onto a specimen during inspection or review of the specimen, as recited in claim 1.** Independent claim 17 has also been amended to recite similar limitations. Support for the amendments to claim 17 can be found in the Specification as set forth above. For at least the reasons set forth above, Batchelder does not teach all limitations of claims 1 and 17.

Batchelder also does not suggest or provide motivation for all limitations of claims 1 and 17. In particular, Batchelder states that "The present invention is an optical instrument which may be used for imaging and metrology of semiconductor wafers from the back side. A key component of the optical instrument is a lens or prism that is formed from a material having a refractive index that is close to that of the semiconductor material." (Batchelder — col. 3, lines 9-12). Batchelder also states that "The imaging apparatus includes an optical device which has a

refractive index that is approximately equal to the refractive index of the substrate. The system is configured to couple high angle rays in the object into rays which propagate through the imaging apparatus." (Batchelder -- col. 2, lines 26-30). In addition, Batchelder states that "Other semiconductor materials, such as indium phosphide, indium antimonide, gallium phosphide and germanium also have relatively high refractive indices in the near infrared. If light can be coupled into high-angle rays in a lens made from one of these materials, it is possible to achieve a numerical aperture of three or more." (Batchelder -- col. 3, lines 59-66). Therefore, Batchelder teaches an apparatus that includes a lens or prism that is formed of a material having a refractive index close to those of the semiconductor materials disclosed by Batchelder. The lens or prism directs infrared light to the specimen. As is known to those of ordinary skill in the art, such semiconductor materials do not transmit ultraviolet light. Therefore, the invention of Batchelder cannot be used for ultraviolet light inspection or review of the specimen since the amount of ultraviolet light projected through the semiconductor lens or prism and onto the specimen would not be sufficient for inspection or review of the specimen.

There is, therefore, no reasonable expectation of success that the prior art invention of Batchelder can be modified such that the apparatus of Batchelder uses ultraviolet light as presently claimed. As such, Batchelder cannot be modified to reject the present claims as *prima facie* obvious. The prior art can be modified or combined to reject claims as *prima facie* obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). MPEP 2143.02. Furthermore, since modifying the prior art invention of Batchelder for ultraviolet light inspection or review would render the prior art invention unable to inspect or review a specimen, such modifications would render the prior art invention of Batchelder unsatisfactory for its intended purpose. Therefore, there is no suggestion or motivation to modify the prior art invention of Batchelder to use ultraviolet light as presently claimed. If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). MPEP 2143.01. As such, Batchelder not teach, suggest, or provide motivation for an optical component configured to project ultraviolet light onto a specimen during inspection or review of the specimen, as recited in claims 1 and 17. Consequently, Batchelder does not teach, suggest, or provide motivation for all limitations of claims 1 and 17.

For at least the reasons stated above, independent claims 1 and 17, as well as claims dependent therefrom, are patentably distinct over the cited art. Accordingly, removal of the § 103 rejections of claims 10-12 and 17-20 is respectfully requested.

**Allowable Subject Matter**

Claim 16 was objected to as being dependent upon a rejected base claim, but was deemed allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant appreciates the Examiner's indication of allowable subject matter and awaits allowance of the remaining claims in the case.

**CONCLUSION**

This response constitutes a complete response to all issues raised in the Office Action mailed October 20, 2005. In view of the remarks presented herein, Applicant asserts that pending claims 1-20 are in condition for allowance. If the Examiner has any questions, comments, or suggestions, the undersigned earnestly requests a telephone conference.

The Commissioner is authorized to charge any fees, which may be required, or credit any overpayment, to deposit account number 50-3268/5589-05201.

Respectfully submitted,



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